ART. III. — 1. *Discussions on Philosophy and Literature, Education and University Reform. Chiefly from the Edinburgh Review, corrected, vindicated, enlarged, in Notes and Appendices.* By SIR WILLIAM HAMILTON, Bart. With an Introductory Essay by ROBERT TURNBULL, D. D. New York: Harper and Brothers. 1858. 8vo.

2. *Lectures on Metaphysics and Logic.* By SIR WILLIAM HAMILTON, Bart. Edited by the REV. HENRY L. MANSEL, B. D., Oxford, and JOHN VEITCH, M. A., Edinburgh. Boston: Gould and Lincoln. 1859 – 60. 2 vols. 8vo.

THE human mind is intolerant of finalities. The best statements of one age are bettered by the next, and possess only a transitional importance. Methods are fluid, systems are solid; the former circulate like living sap through the cambium-layer of philosophy, while the latter, like completed cells, soon lose their vitality by becoming rigid and impermeable heart-wood. As crystallizations of the highest thought of the times, systems have great value, for they constitute the chief materials for the intellectual history of the race ; but taken as isolated products, their value depends on their intrinsic character. They are salutary or pernicious according as they foster or fetter the free movement of thought. If the former, they communicate a direct impulse to human progress ; if the latter, they contribute to progress solely by the reaction they create. No system possesses a stimulative tendency, or can have a permanent influence, which hampers the mind with arbitrary restrictions, and introduces discord into the play of our noblest faculties ; which seeks to concentrate thought on the circumference, and avert it from the centre, of our being ; which postulates a special faculty of *faith*, and remands to its blind asseveration truths which have been derived from the activity of reason. Least of all can a theory be tolerated which assumes an inevitable antagonism between reason and this postulated faith ; for faith and reason, religion and philosophy, stand or fall together. Philosophy is religion comprehended ; religion is philosophy felt.

The constructive system of Sir William Hamilton, which is

reduced to a single formula in his so-called Law of the Con-
ditioned, exhibits the latest attempt to curb speculation by
factitious restraints. The simplicity of this law is equalled
only by the ingenuity of its applications. With the guidance
of the single principle of Mental Impotence, Hamilton claims
to thread his way through many a metaphysical labyrinth
whose windings have proved too intricate for his predecessors.
He professes to have explained by it the two great principles
of Causality and Substance, although of the latter it is to be
regretted he has left no exposition. Even the vexed problem
of Liberty and Necessity, that fatal quicksand of philosophy
which has engulfed so many stout theorists, he claims to have
at least bridged over, if not finally and forever to have filled
up. In fact, he offers us Nescience organized into Science.
So great are the charms of unity and simplicity, and so at-
tractive is an hypothesis which seems to combine them both
with competency to account for the given phenomena, that
Hamilton's philosophy has found numerous adherents, and
exercised a marked influence upon contemporary thought.
Its main principle, that the Unconditioned is beyond the sphere
of human knowledge, has found acceptance where rejection
was to be expected, and has furnished a common ground of
agreement between contending parties. In the interest of
supernaturalism, it has been applied by Mansel in a manner
very analogous to that in which Fichte applied the principles
of the Critical Philosophy in his " Critique of all Revelation,"
though with aims and results widely different. In the interest
of rationalism, it has been used by Spencer in establishing the
incomprehensibility of the omnipresent Force. In fact, it is
the theological bearings of the system which have so remark-
ably drawn to it the attention of European and American
thinkers, and subjected its doctrines to so keen and searching
a scrutiny. Yet that there is no little doubt as to its ultimate
theological tendencies is evidenced by the conflicting appeals
made to it by antagonistic schools of thought. Dogmatism is
divided against itself as to the veritable drift of its tenets.
One party declares that, since all speculative cognition of the
Infinite and Absolute is proved impossible, man's carnal reason
is humbled, deprived of all basis for heterodox conclusions, and

compelled to acknowledge authority and faith as the final cri-
teria of religious truth ; * while another party avers with equal
emphasis that, by teaching the utter incomprehensibility of the
Infinite, systematic theology throws suspicion on the capacity
of man to receive a Divine revelation, and thereby invalidates
its own revealed doctrines.† Scepticism, in its turn, retorts
that the entire structure of dogmatism rests on a transcenden-
tal foundation, and that religious indifferentism is the only
logical consequence of the novel philosophy ; nay, further, she
maintains that, since it supposes truth to lie either at one or
the other of two inconceivable poles of thought, while all the
conceivable lies between them and coincides with neither, all
human knowledge whatever, whether experience, science,
philosophy, or religion, is demonstrated to be sheer illusion.
Of the three, scepticism is incontrovertibly right. Admit the
Law of the Conditioned, and philosophy henceforth wears the
badge of Pyrrhonism. No claim can be more groundless
than that this law " averts scepticism." ‡

The corollaries which Hamilton, his disciples, or his oppo-
nents have deduced from the Law of the Conditioned, have
been vigorously and sufficiently assailed. But that its logical
inconsistencies and their psychological causes have been suffi-
ciently exposed, we are not aware. It is neither satisfactory
nor conclusive to rest the refutation of a theory on the exhibi-
tion of its alleged consequences. The one underlying postu-
late of all science is the harmony of Truth with itself. If,
then, a theory is true, its consequences can never be absurd or
untrue, much as they may shock our prejudices or wound our
sensibilities ; and the only manly course is to accept theory
and consequences together. But if the consequences are re-
ally absurd, and contradict necessary truths, then the theory
must be false, and susceptible of refutation *per se ;* and we
ought never to rest till it has been refuted, irrespectively of all
consequences whatever. It is the purpose of the present essay
to neglect entirely the corollaries from Hamilton's law, and

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* See Mansel's Limits of Religious Thought, *passim.*

† See Saisset, Essay on Religious Philosophy, Vol. II. p. 214, remarks by the
Translator ; Calderwood, Philosophy of the Infinite, 2d edit., p. 286.

‡ Hamilton, Lectures on Metaphysics, p. 556.

consider only the law itself, analyzing its main propositions, and exposing their utter untenability.   By this course the corollaries are refuted *en masse* with their logical foundation; by any other, the principal work still remains undone.   We shall begin by stating the law in Hamilton's own words.

" Now, then, I lay it down as a law which, though not generalized by philosophers, can be easily proved to be true by its application to the phenomena, That all that is conceivable in thought lies between two extremes, which, as contradictory of each other, cannot both be true, but of which, as mutual contradictories, one must.   For example, we conceive space, — we cannot but conceive space.   I admit, therefore, that Space, indefinitely, is a positive and necessary form of thought. But when philosophers convert the fact, that we cannot but think space, or, to express it differently, that we are unable to imagine anything out of space, — when philosophers, I say, convert this fact with the assertion, that we have a notion, a positive notion, of absolute or infinite space, they assume not only what is not contained in the phenomenon, nay, they assume what is the very reverse of what the phenomenon manifests.   It is plain that space must either be bounded or not bounded. These are contradictory alternatives; on the principle of contradiction, they cannot both be true, and, on the principle of Excluded Middle, one must be true.   This cannot be denied, without denying the primary laws of intelligence.   But though space must be admitted to be necessarily either finite or infinite, we are able to conceive the possibility neither of its finitude nor of its infinity.

" We are altogether unable to conceive space as bounded,—as finite; that is, as a whole beyond which there is no further space.   Every one is conscious that this is impossible.   It contradicts also the supposition of space as a necessary notion; for if we could imagine space as a terminated sphere, and that sphere not itself enclosed in a surrounding space, we should not be obliged to think everything in space; and, on the contrary, if we did imagine this terminated sphere as itself in space, in that case we should not have actually conceived all space as a bounded whole.   The one contradictory is thus found inconceivable; we cannot conceive space as positively limited.

" On the other hand, we are equally powerless to realize in thought the possibility of the opposite contradictory; we cannot conceive space as infinite, as without limits.   You may launch out in thought beyond the solar walk, you may transcend in fancy even the universe of matter, and rise from sphere to sphere in the region of empty space, until imagination sinks exhausted; — with all this what have you done?

You have never gone beyond the finite, you have attained at best only to the indefinite, and the indefinite, however expanded, is still always the finite. As Pascal energetically says, 'Inflate our conceptions as we may, with all the finite possible we cannot make one atom of the infinite.' 'The infinite is infinitely incomprehensible.' Now, then, both contradictories are equally inconceivable, and could we limit our attention to one alone, we should deem it at once impossible and absurd, and suppose its unknown opposite as necessarily true. But as we not only can, but are constrained to consider both, we find that both are equally incomprehensible ; and yet, though unable to view either as possible, we are forced by a higher law to admit that one, but one only, is necessary.

" That the conceivable lies always between two inconceivable extremes, is illustrated by every other relation of thought. We have found the maximum of space incomprehensible ; can we comprehend its minimum ? This is equally impossible. Here, likewise, we recoil from one inconceivable contradictory only to infringe upon another. Let us take a portion of space, however small, we can never conceive it as the smallest. It is necessarily extended, and may, consequently, be divided into a half or quarters, and each of these halves or quarters may again be divided into other halves or quarters, and this *ad infinitum.* But if we are unable to construe to our minds the possibility of an absolute minimum of space, we can as little represent to ourselves the possibility of an infinite divisibility of any extended entity."

After applying exactly analogous reasoning to Time, Hamilton proceeds as follows : —

" The same principle could be shown in various other relations, but what I have now said is, I presume, sufficient to make you understand its import. Now the law of mind, that the conceivable is in every relation bounded by the inconceivable, I call the Law of the Conditioned. You will find many philosophers who hold an opinion the reverse of this, — maintaining that the absolute is a native or necessary notion of intelligence. This, I conceive, is an opinion founded on vagueness and confusion. They tell us we have a notion of absolute or infinite space, of absolute or infinite time. But they do not tell us in which of the opposite contradictories this notion is realized. Though these are exclusive of each other, and though both are only negations of the conceivable on its opposite poles, they confound together these exclusive inconceivables into a single notion ; suppose it positive, and baptize it with the name of absolute. The sum, therefore, of what I have now stated is, that the Conditioned is that which is alone conceivable or

cogitable; the Unconditioned, that which is inconceivable or incogitable. The conditioned or the thinkable lies between two extremes or poles; and these extremes or poles are each of them unconditioned, each of them inconceivable, each of them exclusive or contradictory of the other. Of these two repugnant opposites, the one is that of Unconditional or Absolute Limitation; the other, that of Unconditional or Infinite Illimitation. The one we may, therefore, in general call the Absolutely Unconditioned; the other, the Infinitely Unconditioned; or, more simply, the Absolute and the Infinite; the term *absolute* expressing that which is finished or complete, the term *infinite*, that which cannot be terminated or concluded. These terms, which, like the Absolute and Infinite themselves, philosophers have confounded, ought not only to be distinguished, but opposed as contradictory. The notion of either unconditioned is negative; the absolute and the infinite can each only be conceived as a negation of the thinkable. In other words, of the absolute and infinite we have no conception at all." *

A paradox is always suspicious; not necessarily false, but to be tested. The Law of the Conditioned is paradoxical, because it predicates contradiction of two extremes which are each asserted to be utterly incomprehensible. The mutual relation of two objects is known, but the objects themselves are utterly unknown. No explanation is offered of this *prima facie* absurdity, which is only developed more glaringly by a deeper examination. The Unconditioned is assumed as a genus which is divided into two species, the Infinite and the Absolute; † we are entitled to expect, therefore, some essential marks or specific differences by which these co-ordinated species shall be distinguished from each other and from their proximate genus. As logical extension and intension are invariably in the inverse ratio, we are entitled to expect that, since the Unconditioned is more comprehensive than either of its species, Hamilton will indicate some positive characteristics differentiating the Infinite and the Absolute. Accordingly, the Infinite is defined as Unconditional Illimitation, the Absolute as Unconditional Limitation. Yet almost in the same breath we are told that each is utterly inconceivable, each the mere negation of thought. On the one hand, we are told that they differ; on the other hand, we

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* Lectures on Metaphysics, pp. 526 – 531.

† "The Unconditioned, in our use of language, denotes the genus of which the Infinite and Absolute are the species." — Discussions on Philosophy, p. 21, note.

are told that they do not differ. Now which does Hamilton mean? If he insists on the definitions as yielding a ground of conceivable distinction, he must abandon the inconceivability; but if he insists on the inconceivability, he must abandon the definitions as sheer verbiage, devoid of all conceivable meaning. There is no possible escape from this dilemma. Further, two negations can never contradict, for contradiction is the asserting and the denying of the same proposition; two denials cannot conflict. If Illimitation is negative, Limitation, its contradictory, must be positive, whether conditional or unconditional. In brief, if the Infinite and Absolute are wholly incomprehensible, they are not distinguishable; but if they are distinguishable, they are not wholly incomprehensible. If they are indistinguishable, they are to us identical, and identity precludes contradiction. But if they are distinguishable, distinction is made by difference, which involves positive cognition; hence one at least must be conceivable. It follows, therefore, by inexorable logic, that either the contradiction or the inconceivability must be abandoned.

The Law of the Conditioned, then, in its primary enunciation, is at war with itself. Zero is maintained to be contradictory of zero; a proposition which is meaningless and absurd. This objection, however, which alone is fatal to the Law, may be altogether waived; and the flimsiness of the generalization may be exposed on broader grounds. The error has its root in a psychological confusion of the sensuous imagination with the non-sensuous reason, and a resulting co-ordination of an imaginative conception with an abstract proposition; two things which do not belong to the same category, and hence bear no mutual relation. Two imaginative conceptions may be compared, or two abstract propositions; but to oppose an imaginative conception to an abstract proposition is like opposing an inch to an ounce, or an hour to a bushel. Hamilton rests his Law of the Conditioned upon arguments drawn from the ideas of Space and Time, as appears from the foregoing citation; but we have already proved that he confounds the purely rational idea of Space with the imaginative conception of Extension.* This

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. * See North American Review for July, 1864, Art. III., "The Philosophy of Space and Time," § 6.

confusion has been shown to be prolific of absurdities in many other systems; but in no other system has it generated absurdities so superlative as in the Philosophy of the Conditioned. That these strictures are neither unwarranted nor excessive will, we believe, be abundantly evidenced by an analytical criticism of the Law itself.

It will be convenient to separate and condense the Law into its four component clauses, as follows: —

1. The Infinite and Absolute, as defined, are contradictory and exclusive of each other; yet one must be true.

2. Neither of them can be conceived as possible.

3. Each is inconceivable, and the inconceivability of each is referable to the same cause, namely, mental imbecility.

4. As opposite extremes or poles, they include everything conceivable between them.

These four propositions are the four corner-stones upon which the whole Philosophy of the Conditioned is built; and the falsity of any one of them must inevitably undermine the Law. It will be our task to prove that, except the first, which is itself a blunder, they are all absolutely and equally false.

I. The first of these four theses is indisputably true. The Absolute, defined as Unconditional Limitation, is beyond question contradictory of the Infinite, defined as Unconditional Illimitation. In admitting their contradiction, however, it is necessary to make a qualification, so obvious as to be self-evident, and yet not always borne in mind. Contradictories mutually exclude each other; to posit the one is *ipso facto* to remove the other, and reciprocally. [Therefore contradiction can be subjective only, never objective; that is, it can exist solely between judgments, and never between existences.] For objects in themselves, as external realities, must coexist; they cannot, therefore, mutually exclude each other, which is the condition of their being contradictories. The contradiction between the Infinite and the Absolute is, consequently, a contradiction between judgments in regard to limitation, not between two objective realities. When we admit Hamilton's contradiction, we mean that the Infinite and the Absolute, as defined, cannot coexist; that if the Infinite exists, there is no such thing as the Absolute, and if the Absolute exists, there is no such thing as

the Infinite. Hamilton rejects the Hegelian principle of the Identity of Contradictories; and he is therefore bound to accept this consequence of his own theory. If we should allow the given definitions, then we must admit the contradiction between the Infinite and the Absolute.

But this hypothetical admission is no concession to the Law of the Conditioned; for the definition of the Absolute involves numerous absurdities. Our psychological analysis has shown that unity and infinity are equally necessary predicates of Space, or, in other words, that Space is an *infinite unit.** Now infinity is purely a negative predicate, and is convertible with *absolute illimitability;* it is an idea of the non-sensuous reason, not a conception of the sensuous imagination, and is simply a condensation of the proposition, " There are no limits." But unity may be construed both as positive and as negatiev, both as a conception of the sensuous imagination and as an idea of the non-sensuous reason. As the former, it is that attribute of an object which colligates its parts in a conceivable oneness, and presents them as a complete, coherent whole; it equally implies plurality of constituents and definiteness of outline; and is cognized solely through the senses and the sensuous imagination. As the latter, it is that attribute of an object which constitutes the impossibility of its partition into elements, and hence may be expressed in the proposition, " There are no parts"; it is simple indivisibility, or the negation of complexity, and is perfectly compatible with either finitude or infinitude. The one is *composite unity*, and is exemplified in the human body; the other, expressing the impossibility of resolution by analysis, is *incomposite unity*, and is exemplified in the infinite personality of God, and in the finite personality of the human soul.

Now the Law of the Conditioned grew out of Hamilton's confused recognition of the equal necessity of infinity and unity as predicates of Space. He dimly perceived the truth that Space is an infinite unit; but how was he to interpret this truth? Infinity he at once recognized as a negative notion; but, failing to perceive the radical and all-important distinction

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* See article already cited, on " The Philosophy of Space and Time," §§ 15, 16.

between composite and incomposite unity, he unfortunately interpreted the unity of Space as composite, thereby co-ordinating the negative, rational idea of infinity with the positive, imaginative conception of unity.   Consequently he found himself compelled to regard as of equal authority both of these propositions: —

1. Space is illimitable.
2. Space is a limited whole.*

One of these, by the first law of thought, is necessarily true, and the other false.   Hamilton clearly saw the contradiction; but he also saw that to accept both propositions as necessary and dogmatic affirmations of reason would convict human intelligence of utter worthlessness, and demonstrate scepticism beyond the possibility of refutation.   From this result he instinctively shrank, and sought refuge in the principle of mere weakness, of "mental imbecility," which suffered him to regard the frowning contradictories as resulting, not from a legitimate, but an illegitimate, use of reason.   By thus proscribing all speculation on the Infinite and the Absolute, of which these propositions are the expression, he hoped to escape the impossible task of reconciling their contradiction, and yet save the credibility of intelligence within its proper sphere of the finite. This hope was as reasonable as that of the ostrich to escape the hunter by burying its head in the sand.   But fortunately the

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* "Space, it is evident, must either be limited, that is, have an end, a circumference; or unlimited, that is, have no end, no circumference.   These are contradictory suppositions; both, therefore, cannot, but one must, be true.   Now let us try positively to comprehend, positively to conceive, the possibility of either of these two mutually exclusive alternatives.   Can we represent or realize in thought extension as absolutely limited ? in other words, can we mentally hedge round the whole of Space, conceive it as absolutely bounded, that is, so that beyond its boundary there is no outlying, no surrounding space ?   This is impossible. . . . . . It is thus impossible for us to think Space as a totality, that is, as absolutely bounded, but all-containing.   We may, therefore, lay down this first extreme as inconceivable.   We cannot think Space as limited.   Let us now consider its contradictory; can we comprehend the possibility of infinite or unlimited Space ?   To suppose this is a direct contradiction in terms; it is to comprehend the incomprehensible.   We think, we conceive, we comprehend a thing, only as we think it as within or under something else; but to do this of the infinite is to think the infinite as finite, which is contradictory and absurd." (Lectures on Logic, pp. 72, 73.)   Hamilton seems to suppose that to "comprehend the possibility of the infinite," and to "comprehend the infinite," are convertible expressions!

door of escape stands wide open. The error of Hamilton lay in confounding Extension with Space, composite unity with incomposite unity, sensuous imagination with non-sensuous reason. Infinity and unity are equally absolute and unconditional predicates of Space; but the unity is incomposite.

Wholeness, as we have seen, is predicable of an object either with respect to interior constitution or to exterior configuration. In the former aspect it signifies simplicity, indivisibility, or incomposite unity; in the latter aspect it signifies completeness, limitation, or composite unity. Space, therefore, being necessarily illimitable, can be a whole, a total, only in the former signification; and its unity must accordingly be interpreted as incomposite, on pain of absolute contradiction.

Instead of misinterpreting the unity of Space as composite, evolving the consequent contradiction, and most absurdly generalizing this individual antinomy into a universal law,* Hamilton ought to have interpreted it as incomposite, and thus have spared himself his gratuitously created perplexity. The two propositions would then have become as follows : —

1. Space is illimitable.
2. Space is indivisible.

The keenest analysis will fail to discover any contradiction between these judgments, two negations being incapable of contradiction. Instead, therefore, of defining the Absolute as " unconditional limitation," " a bounded whole," that is, as composite unity, we must define it, when applied to Space and Time, as " unconditional totality or indivisibility," that is, as incomposite unity. The Absolute and Infinite, therefore, far from conflicting, henceforth coincide as compatible attributes ; and the unnatural antinomy is forever resolved.

II. The second of the four theses to be considered maintains that neither the Absolute nor the Infinite "can be conceived as possible." This phrase in the connection means merely " can be regarded as actual or existent " ; it contains no reference to the inconceivability asserted in the third thesis, which will be criticised below. Let us once more recur to Hamilton's

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* " Rien n'est plus voisin de l'ignorance d'un principe que son excessive généralisation." (De Gérando, De la Génération des Connaissances Humaines, Introd., pp. xx.) — There is no wiser philosophical maxim than this.

definitions of the Absolute and Infinite, and apply them as before to Space; we then have the contradictory propositions : —

<div style="text-align:center">

1. Space is limited.

2. Space is unlimited.

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Bearing in mind that receptivity, unity, and infinity have been shown to be the constituent elements of the idea of Space,* the two propositions may assume the following form : —

<div style="text-align:center">

1. The-unlimited is limited.

2. The-unlimited is unlimited.

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Now the first of these is the logical translation of Hamilton's Absolute Space, the second of his Infinite Space. The first is necessarily false by the Law of Contradiction, while the second is necessarily true by the Law of Identity. Yet between these two judgments, according to the Law of the Conditioned, the human mind must halt in conscious imbecility, unable to assent to either as possible, but compelled to admit one as necessary! If valid, this law would be the very *reductio ad absurdum* of intelligence. But by thus reducing the absolute and infinite, as defined, to their logical formulæ, the fallacy is laid bare; and it becomes evident that, as defined by Hamilton, the Absolute is a metaphysical absurdity or contradiction in terms, while the Infinite is a metaphysical necessity. It is but fair to point out that the validity of this proof rests on the accuracy of our analysis of Space, as necessarily illimitable ; if the analysis is unsound, the proof is a *petitio principii.*

III. The third of the four theses maintains the inconceivability of the two opposites, and refers the inconceivability of each to the same cause, namely, a mental impotence. Of two contradictory propositions, Space is limited, Space is unlimited, Hamilton affirms that neither is " conceivable." Without any investigation into the nature and causes of this inconceivability, he at once assumes a mental impotence as its origin in both cases; and on this postulated mental impotence, for which no evidence is assigned beyond the simple statement and illustration of the phenomenon itself, he proceeds to build up his system. But what is the signification of this word " incon-

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* See " The Philosophy of Space and Time," §§ 14, 15, 16.

ceivable " ?   Hamilton employs it in two entirely dissimilar senses, and by a kind of logical prestidigitation substitutes one for the other with marvellous celerity.   It is sometimes convertible with the word *unimaginable*, and then denotes impossibility of representation by the sensuous imagination; sometimes it is convertible with the word *incogitable* or *unthinkable*, and then denotes impossibility of cognition by any faculty whatever.   If Hamilton had only been precise and uniform in his use of this word, he could not have failed to perceive the inconsistency of his own statements.   If he had rigorously adhered to the latter signification, he would certainly have refrained from maintaining the position that we can predicate contradiction as a cogitable relation between incogitable terms.   Or if he had rigorously adhered to the former signification, it is scarcely possible that he could have referred the unimaginability of the Infinite and of the Absolute to the same cause.   But let us interpret the present thesis according to this second meaning of the word, which we believe greatly predominates in his usage of it, and which it is certainly to his advantage that we should adopt.

Whatever transcends the positive data of sensuous experience is inconceivable or unimaginable, because nothing is presented, and consequently nothing can be represented.   In this sense pure Space is inconceivable, whether as finite or as infinite, and by a loose use of language this inconceivability may be referred to the impotence of imagination.   But we use the phrase under protest, because no faculty can be legitimately required to transcend the conditions of its exercise.   The imagination deals only with sensible phenomena and their synthetical mental elaboration; it does not find pure Space, either as finite or as infinite, presented in these phenomena, and is therefore powerless to represent it.   Still this is impotence in one sense of the word, and we let this objection pass.   We will admit, then, that the inconceivability of Infinite Space is due to a mental impotence.

But whatever violates the law of contradiction is inconceivable or unimaginable for a totally different reason.   A contradiction in terms, such as an angular sphere, a virtuous sin, or a protuberant hole, is a self-annihilating synthesis

of repugnant notions, and is inconceivable, not because it *transcends*, but because it *violates*, the necessary laws of imaginative activity. Now the Absolute, being, according to Hamilton, the attribute of a " complete, bounded whole," expresses finitude, while Space has been shown to involve infinitude ; the phrase Absolute Space, therefore, is as flat a contradiction in terms as a true falsehood or an hexagonal square. If, by a stretch of indulgence, we consent to refer the inconceivability of Infinite Space to a mental impotence, it would be sheer fatuity to refer the inconceivability of Absolute Space to any such cause. For to predicate either necessity or absurdity of a relation is the intensest possible act of intellectual potency. Obedience to a law of thought is not mental powerlessness ; reason will not tolerate a repugnant synthesis, but by a spontaneous, involuntary, and irresistible energy annihilates it. If, therefore, the inconceivability of the infinite be referred to the impotence of imagination to transcend the conditions of its own activity, the inconceivability of the Absolute (as defined) must be referred to the highest possible potency of reason. Thus the third thesis is disproved ; for such a partial and unreal impotence is altogether insufficient as a basis for Hamilton's rash generalization.

IV. The last of the four theses will best be re-stated in Hamilton's own words ; the italics are his. " The conditioned is the mean between two extremes, two inconditionates, exclusive of each other, neither of which *can be conceived as possible*, but of which, on the principles of contradiction and excluded middle, one *must be admitted as necessary*." *

This sentence excites unmixed wonder. To mention in the same breath the law of excluded middle, and two contradictories with a mean between them, requires a hardihood unparalleled in the history of philosophy except by Hegel. If the two contradictory extremes are themselves incogitable, yet include a cogitable mean, why insist upon the necessity of accepting either extreme ? This necessity of accepting one of two contradictories is wholly based upon the supposed impossibility of a mean ; if a mean exists, that may be true, and both

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* Discussions on Philosophy, p. 22.

contradictories together false.   But if a mean between contra-
dictories be both impossible and absurd, (and we have hitherto
so interpreted the law of excluded middle,) Hamilton's " con-
ditioned " entirely vanishes.   Even if the contradiction be-
tween the Infinite and the Absolute were developed from valid
definitions, there would be no room whatever for the " con-
ditioned " between them.   Whether Space as unconditioned is
bounded or not, is a question which does not concern Extension
as conditioned.   Still less does it concern the conditioned in
general, or afford any basis for so sweeping a generalization.
In fact, the very enormity of the paralogism embodied in this
fourth thesis has been its chief protection.   The only imagina-
ble genesis of such an oversight as that of postulating a mean
between contradictories seems to be this ; the metaphor of
" two opposite poles of thought" may have suggested the inter-
mediate space between the two extremities of a straight line.
But such a metaphor would be singularly infelicitous ; for
instead of imagining the contradictories at the ends of the line,
with an intermediate space between them, the line should be
bisected, each contradictory monopolizing an entire half, and
thereby leaving no medium.   The division A and not-A ex-
hausts the universe.   Whatever may be thought of this sup-
posititious origin of the error, the fact of its existence is indis-
putable.   What has a conceivable cubic yard to do with either
of the inconceivables, Infinite Space or Absolute Space ?   How
is it a mean between the contradictories ?   The conclusion
which Hamilton ought to have educed from his own premises
may be easily illustrated by the following simple diagram :
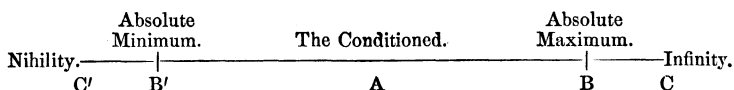
Taking Space as our illustration, every conceivable extension
is included between the opposite poles of *all* Space or Infinity
and *no* Space or Nihility ; or else between the absolute maxi-
mum of space and the absolute minimum of space.   That is to
say, if of Hamilton's two contradictories the Infinite should be
objectively real, then the conditioned would lie between C and
C' ; if the Absolute, then it would lie between B and B'.   But

in neither case would it lie, as he maintains, between B and C on the one hand, and B' and C' on the other hand.   Our diagram, moreover, exposes another error; while Hamilton co-ordinates B and C as *objects*, one of which must be real, he co-ordinates B' as an *object*, and C' as a *process* (of division) of which zero is the limit.   But to co-ordinate an object and a process as contradictories is utterly illegitimate.   To dwell further, however, upon a theory so indefensible would be superfluity of criticism.

Apart from direct proof, Hamilton gives a list of " Contradictions proving the Psychological Theory of the Conditioned " ; * and, as some of these present plausible antinomies, they must be examined.   But, both as a necessary preliminary to their solution, and as a discussion possessing intrinsic interest, we shall first offer some general considerations upon the cognition of the Infinite.

There has been much misapprehension of the doctrine that the Infinite is only negatively known.   The words *infinite* and *absolute* have been wands of necromancy in the hands of philosophical sorcerers.   *They denote attributes, and represent objects by metonymy alone.*   Infinite expresses the attribute of illimitability ; as applied to Space and Time, Absolute expresses the attribute of totality (incomposite unity or indivisibility), and as applied to God, the attribute of independent existence.   Their use as ambiguous middle terms has given rise to unwarrantable conclusions ; what is true only of the attributes has been transferred most illogically to the objects in which they inhere.   Thus, because we have only negative knowledge of the infinite, it is inferred that we have no positive knowledge of God.   We shall treat hereafter of this sophism ; at present we shall consider the true interpretation of the doctrine that our cognition of infinity is purely negative.

It has been argued by Fénelon, that finitude, not infinitude, expresses the real negation ; that nothing is so negative as a limit ; and that to deny all limit is to make a double negation, which is tantamount to a positive affirmation.†   This ingenious

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* Lectures on Metaphysics, pp. 682, 683.

† " L'idée même que j'ai de l'infini n'est ni confuse ni négative; car ce n'est point en excluant indéfinitivement toutes bornes, que je me représente l'infini.   Qui

argument confounds Being with Knowledge. All existence, whether finite or infinite, is real; the distinction of positive and negative belongs to thought alone, and arises solely as the product of the act of comparison. In real being, the attributes of finitude and infinitude coexist in different objects; in thought, they may also coexist in different objects, but become mutually exclusive, like all contradictories, in relation to the same object. But this tentative application of predicates to objects can take place only in thought; hence the terms positive and negative express simply the results of an intellectual process. The question is not, then, which term, finite or infinite, expresses a real negation *in being;* for such a question is either meaningless, or is convertible into the self-answered question, Which term expresses a real limitation? But the true inquiry is, Which term denotes a positive attribute, and which the simple absence of this attribute, *in thought?* Now any attribute is cognized as positive in relation to an object in which it inheres; and the same attribute is cognized as negative in relation to an object in which it does not inhere. That is, all attributes which are positively cognizable at all, must be cognizable in actual presentations of experience; and, inasmuch as a comparison of these presentations shows that the same attributes do not characterize them all, the distinction of positive and negative, that is, present and absent, is developed in consciousness. With reference to any particular object, a present attribute is called positive, an absent one is called negative; but in the latter case, the positive attribute itself, as formerly cognized in other objects, must be first conceived, and constitute the basis of the negative conception. *It is the character of the predication alone, as copulative or disjunctive, which determines the positive or negative character of the attribute.* Hence the question at issue is, which of the two attributes, finite or infinite, is presentatively cognized in experience, and thus becomes the basis

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dit borne dit une négation toute simple ; au contraire, qui nie cette négation, affirme quelque chose de très positive. . . . Rien n'est si négatif qu'une borne. . . . La négation redoublée vaut une affirmation ; d'où il s'ensuit que la négation absolue de toute négation est l'expression la plus positive qu'on puisse concevoir, et la suprême affirmation ; donc le terme infini est infiniment affirmatif par sa signification, quoiqu'il paroisse négatif dans le tour grammatical." (Œuvres, ed. 1787, Tom. II. p. 198.)

for the conception of the other? It needs but to remember that every object whatever of presentative cognition is limited, and that the term finite expresses this universal attribute of limitation, in order to decide the question. Limitation alone is positively cognized in experience, while illimitation is a deduction of the reason. Presence of limitation constitutes the finite, absence of limitation constitutes the infinite. The former is positive, the latter is negative; *but positive limitation is the basis of both conceptions.* This is necessarily the case with human intelligences, to which the finite constitutes the primordial data of knowledge; while to the Divine Intelligence such reasoning is altogether inapplicable. Our stand-point is the finite, not the infinite; to us, therefore, the infinite is a negative idea. But this, as has just been shown, is very far from being the " negation of thought." *

The idea of infinity, thus interpreted, originates neither in the faculties of sensuous presentation and representation, nor in those which cognize relations among objects, nor yet in those which cognize relations among relations, of whatever degree of abstractness; in short, it cannot in any wise be deduced from the finite. But it is contained in those ideas of the higher reason which reveal the absolute and necessary correlates of things, and without which intelligence itself would be impossible. It was shown in our former article, for instance, that infinity is an integral element in the triple synthesis which constitutes the idea of Space, as distinguished from Extension; the antithesis of finite and infinite, therefore, is seen to be *a priori* necessary. The perfect clearness of the idea of infinity

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* Discussions, p. 568. — It is argued by Ulrici, that God, being limited neither *in* nor *by* any other existence, is infinite in a positive sense, inasmuch as his will alone imposes all limitation : " Und mithin hat Gott doch *keine* Gränze *an* einem Andern, noch eine Schranke die ihm *durch* ein Andres auferlegt wäre. Er ist und bleibt vielmehr der Unendliche, unendlich im *positiven* Sinne als der alle Gränze und Schranke, Grösse und Maass selbst Setzende." (Gott und die Natur, 1862, p. 535.) Like Fénelon, Ulrici fails to distinguish between the attribute and the object in which it inheres, and evades the point by transferring the distinction of positive and negative, which pertains only to attributes as predicated in thought, to existence in itself. No one denies that all limitation of created beings originates in God's will; but the question is, *Do we conceive* his infinite attributes otherwise than as attributes devoid of limitation ? If not, then, however positive our idea of God may be in some respects, our idea of his infinity is purely negative.

is lost only when the imagination attempts to realize it in a sensuous conception of some imaginable object, and thus creates a gratuitous and perplexing antinomy. Abandoning all attempts at sensuous representation, the mind finds no difficulty whatever in comprehending the meaning of illimitability.*

Passing from the nature and genesis of the idea of infinity, taken in its abstractness as a pure attribute, let us consider it in relation to the existences of which alone it can properly be predicated. The consideration of this problem involves the necessity of a philosophical classification, without which certain distinctions in the applications of the predicate cannot be made apparent. The nomenclature adopted must be, from the nature of the case, inadequate, and, though not proposed at random, may perhaps be supplanted by a better one ; for while the existences of which we predicate infinity transcend all empirical cognition in and by themselves alone, the only terms by which we can express the necessary distinctions must be derived from knowledge empirically acquired. Still, by criticising our own terms, and defining them by means of the requisite qualifications, it is hoped that the danger of misapprehension will be forestalled and obviated.

Infinity, then, is of two kinds, Quantitative and Qualitative. Quantitative Infinity is so called, not because it is the attribute of a quantity (for an infinite object is raised absolutely above the category of quantity), but because it is the attribute of that which is the necessary condition and correlate of quantity. It is a primary predicate or immediate attribute, and is expressed by the adjective *infinite*. It is subdivided into Statical and Dynamical, both of which designations are unsatisfactory on account of their physical or material associations ; yet they point to a profound distinction which no human language could adequately express. Statical Infinity is the attribute of Space,

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* " Obscure pour les sens, elle [i. e. l'idée de l'infini] est très-claire pour la raison ; confuse pour l'imagination, elle est distincte pour l'entendement." (Bénard, Précis de Philosophie, p. 121.) So Cousin : " L'imagination ne se représente que des grandeurs et des formes, c'est-à-dire, des phénomènes finis, limités, imparfaits, contingents. Si elle veut aller au delà, elle doit être en effet saisie de vertige. Mais la raison est plus forte que l'imagination ; l'invisible est son domaine ; elle n'imagine point, elle conçoit." (Philosophie de Kant, p. 214.)

Dynamical Infinity is the attribute of Time. It is customary to express this distinction by the statement that Space is infinite in three dimensions, Time in only one dimension. But this statement, for the following reasons, we regard as not merely inadequate, but as incorrect. In the first place, it brings these transcendental objects under mathematical categories, namely, number and mensurability ; and this is legitimate only of their concrete determinations in finite existences.* In the second place, allowing such an application of mathematical categories as legitimate, the distinction still fails to maintain itself. With regard to Space, from any assumed point as a centre countless radii may be conceived, any one of which is as much a dimension of Space as any other. What is true in the assignation of only three dimensions to Space, is simply this : from a single point but three straight lines can be drawn which shall be mutually at right angles with each other, or, only three rectangularly intersecting planes can pass through a given point. But this is no law of the absolute vacuity in which no lines or planes are conceived to exist (pure Space) ; it is merely a law of the lines and planes themselves, cognate with the law that two straight lines can only intersect in one point, and, like all mathematical law, belongs to that unconditioned Nature of Things which, admitting of no explanation, is the ultimate terminus of all research. Geometric mensuration implies several fixed points, and fixed relations between at least two extensions, magnitudes, or forms. You cannot, therefore, predicate dimensions of Space, except in virtue of what you in imagination arbitrarily put into it ; but into pure Space you have no right to put anything. Neither is it more allowable to predicate dimension of Time. The popular image of Time as a line or a stream is purely sensuous and philosophically false ; for it reduces the present to a mere point, whereas the present is infinite in the sense of existing throughout the infinity of Space. All symbolism of Space and Time,

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* See article on " The Philosophy of Space and Time," § 9. By a curious perversion of ingenuity, Baggesen treats the past, present, and future as the three dimensions of Time, and evolves an amusing puzzle out of the want of parallelism (*Missverhältniss*) between these and the three dimensions of Space. (Philosophischer Nachlass, Vol. II. pp. 141 – 144.)

regarded as existences apart from the emblems which symbolism must necessarily employ, leads inevitably to confusion and contradiction.   It is sufficient to say simply that Time can be measured only by means of fixed dates, determined by relations of duration and succession among existences and events.   Space and Time have no dimensions *per se*, but are the *sine quâ non* of all dimension.   In the third and last place, it is unscientific to distinguish Space from Time in terms of itself.   If we contrast the infinity of Space and of Time as Tridimensional and Unidimensional, we distinguish them in terms of Space ; for dimension presupposes Extension, and Extension presupposes Space.   If such a procedure were admissible, it would be better to distinguish the infinity of one from that of the other as respectively Synchronous and Diachronous, which would state the distinction in terms of Time ; for, merely positing the infinity of Space as actual at each moment of Time, and the infinity of Time as actual only in its own totality, this distinction does not involve any allusion to mathematical categories.   But we regard either distinction as unphilosophical.   Following strictly the same conception which justifies the term Quantitative as applicable, not merely to quantity itself, but also to the conditions of quantity, we have preferred to designate the infinity of Space as Statical, as the condition of statical quantity (extension, magnitude, &c.), and the infinity of Time as Dynamical, as the condition of dynamical quantity (force, motion, protension, &c.).   No definition could be more suggestive than that of Schelling, — Space, "Pure being with the negation of all activity"; Time, "Pure activity with the negation of all being."   Perhaps another definition might be equally suggestive, — Space is Infinity at rest, Time is Infinity in motion.   Such definitions, however, though forcible from their very self-contradiction, are mere paradoxes unsusceptible of analysis.

Qualitative infinity is a secondary predicate, that is, the attribute of an attribute, and is expressed by the adverb *infinitely* rather than by the adjective *infinite*.   For instance, it is a strict use of language to say that Space is infinite, but it is an elliptical use of language to say that God is infinite.   Precision of speech would require us to say, God is infinitely good, wise,

or great; or, God is good, and his goodness is infinite. The distinction may seem trivial, but it is based on an important difference between the infinity of Space and Time on the one hand, and the infinity of God on the other. Neither philosophy nor theology can afford to disregard this difference. Quantitative Infinity is illimitation by *quantity*, Qualitative Infinity is illimitation by *degree*. Quantity and degree alike imply finitude, and are categories of the finite alone. The danger of arguing from the former kind of infinity to the latter cannot be overstated; God alone possesses Qualitative Infinity which is strictly synonymous with *absolute perfection*, and the neglect of the distinction between this and Quantitative Infinity leads irresistibly to pantheistic and materialistic notions.* Spinozism is possible only by the elevation of " infinite extension " to the dignity of a divine attribute. Dr. Samuel Clarke's identification of God's " immensity " with Space has been shown by Martin to ultimate in pantheism. From ratiocinations concerning the incomprehensibility of infinite Space and Time, Hamilton and Mansel ·pass at once to conclusions concerning the incomprehensibility of God. The inconsequence, however, of all such arguments is absolute; and if Philosophy tolerates the transference of spatial or temporal analogies to the nature of God, she must reconcile herself to the negation of his personality and spirituality. Such putative analogies have no theological application whatever. We have no room to dilate on this topic, but will simply point out a double neglect which has generated paralogisms by myriads in speculations concerning " the Infinite " : 1. neglect of the distinction between the *attributive* and the *metonymical* use of the term Infinite ; 2. neglect of the, distinction between Quantitative and Qualitative Infinity.

The reciprocal relations of Space, Time, and God are veiled in impenetrable darkness. Many minds hesitate to attribute real infinity to Space and Time, lest it should conflict with the infinity of God.† Such timidity has but a slender title to

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* See some acute remarks in Calderwood's Philosophy of the Infinite, 2d ed., p. 183 et seq.

† " Hæcque indefinita dicemus potius quam infinita ; tum ut nomen infiniti soli Deo reservemus, quia in eo solo omni ex parte, non modo nullos limites agnoscimus,

respect. If the Laws of Thought necessitate any conclusion
whatever, they necessitate the conclusion that Space and Time
are each infinite ; and if we cannot reconcile this result with
the infinity of God, there is no alternative but to accept scepti-
cism with as good a grace as possible. No man is worthy to
join in the search for truth who trembles at the sight of it
when found. But a profound faith in the unity of all truth
destroys scepticism by anticipation, and prophesies the solu-
tions of reason. Space is infinite, Time is infinite, God is in-
finite ; three infinities coexist. Limitation is possible only
between existences of the same kind. There could not be two
infinite Spaces, two infinite Times, or two infinite Gods ; but
while infinites of the same kind cannot coexist, infinites of
unlike kinds may. When an hour limits a rod, infinite Time
will limit infinite Space ; when a year and an acre limit wis-
dom, holiness, and love, infinite Space and Time will limit the
infinite God. *But not before*. Time exists ubiquitously, Space
exists eternally, God exists ubiquitously and eternally. The
nature of the relations between the three infinites, so long as
Space and Time are ontologically incognizable, is utterly and
absolutely incomprehensible ; but to assume contradiction, ex-
clusion, or mutual limitation to be among these relations, is as
gratuitous as it is irreverent.

To recapitulate our distinctions, and present them at a
glance, we exhibit the following synopsis : —

INFINITY $\begin{cases} \text{QUANTITATIVE} \begin{cases} \text{Statical . . . . . SPACE.} \\ \text{Dynamical . . . . TIME.} \end{cases} \\ \text{QUALITATIVE . . . . GOD.} \end{cases}$

It will doubtless be noticed that in this scheme no place is
left for the mathematical Infinite ; and the reasons for this
omission we shall proceed now to state.

Mathematics is conversant with quantities and quantitative
relations. The conception of quantity, therefore, if rigorously
analyzed, will indicate *a priori* the natural and impassable

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sed etiam positive nullos esse intelligimus ; tum etiam," etc. (Descartes, Princip.
Philos., Pars Prima, § XXVI.) Compare Calderwood, Philosophy of the Infinite.
p. 334 ; also, Hamilton, Lect. on Metaph., pp. 684 – 688, and Trendelenburg, Logi-
sche Untersuchungen, Vol. I. p. 168.

boundaries of the science; while a subsequent examination of the quantities called infinite in the mathematical sense, and of the algebraic symbol of infinity, will be seen to verify the results of this *a priori* analysis.

Quantity is that attribute of things in virtue of which they are susceptible of exact mensuration. The question *how much* or *how many* (*quantus*) implies the answer *so much* or *so many* (*tantus*); but the answer is possible only through reference to some standard of magnitude or multitude arbitrarily assumed. Every object, therefore, of which quantity in the mathematical sense is predicable, must be by its essential nature *mensurable*. It is true, from the limitation of human powers, the mathematician may be unable actually to apply his mensurating processes; and hence the strict propriety of the phrase, immeasurable or inconceivable quantities. But the disability is purely subjective, and cannot originate from the nature of the quantities *as such;* for it is the very nature of quantity to be exactly mensurable. Now mensurability implies the existence of actual, definite limits, since without them there could be no fixed relation between the given object and the standard of measurement, and consequently no possibility of exact mensuration. In fact, since quantification is the object of all mathematical operations, mathematics might be not inaptly defined as the *science of the determination of limits.* It is evident, therefore, that the terms *quantity* and *finitude* express different phases of precisely the same attribute, namely, *limitation,* — the former relatively, and the latter absolutely; for quantity is limitation considered with relation to a standard of measurement, and finitude is limitation considered simply in itself. The sphere of quantity, therefore, is absolutely identical with the sphere of the finite; and the phrase *infinite quantity,* if strictly construed, is a contradiction in terms.

The result thus attained by considering abstract quantity is corroborated by considering concrete and discrete quantities. Such expressions as *infinite sphere, radius, parallelogram, line,* and so forth, are self-contradictory. A sphere is limited by its own periphery, and a radius by the centre and circumference of its circle. A parallelogram of infinite altitude is impossible, because the limit of its altitude is assigned

in the side which must be parallel to its base in order to constitute it a parallelogram. In brief, all figuration is limitation. The contradiction in the term *infinite line* is not quite so obvious, but can readily be made apparent. Objectively, a line is only the termination of a surface, and a surface the termination of a solid; hence a line cannot exist apart from extended quantity,* nor an infinite line apart from an infinite quantity. But as this term has just been shown to be self-contradictory, an infinite line cannot exist objectively at all. Again, every line is extension in one dimension, hence a mathematical quantity, hence mensurable, hence finite; you must therefore deny that a line is a quantity, or else affirm that it is finite. Let us now consider the so-called infinite line as existing subjectively in imagination. Regarding the line as in process of generation by a moving point, we admit that no external limit would prevent its being endlessly produced. But at every instant it would still be terminated by the moving point, and cannot be regarded as extending beyond it; hence it can never be infinite, for it is forever bounded by its generating point, and forever capable of still farther production. Moreover, the subjective line exists so long only as the act of imagination gives it existence, and as this act is necessarily finite and comes to an end, the line must also be finite and come to an end. On regarding the line as already generated, it cannot be supposed infinite without supposing it to have already exhausted the possibility of farther extension, which is contradictory of the infinity of Space; and if it be said that it is no more contradictory to suppose the line infinite than it is to suppose Space infinite, the reply is ready and decisive, that the line is a quantity, whereas Space is not a quantity, and that the quantitative nature of the line precludes its infinity.

The same conclusions are forced upon us, if from geometry we turn to arithmetic. The phrases *infinite number*, *infinite series*, *infinite process*, and so forth, are all contradictory when literally construed. Number is a relation among separable units or integers, which, considered objectively as independent of our cognitive powers, must constitute an exact sum; and

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* See " The Philosophy of Space and Time," § 9.

this exactitude or synthetic totality is limitation.* If considered subjectively in the mode of its cognition, a number is infinite only in the sense that it is beyond our power of imagination or conception, which is an abuse of the term. In either case, the totality is fixed, that is, finite. So, too, of *series* and *process.* Since every series involves a succession of terms or members, and every process a succession of stages or steps, the notions of series and process plainly involve that of number, and must be rigorously dissociated from the idea of infinity. At any one step, as at any one term, the number attained is determinate, hence finite. The fact that, by the law of the series or of the process, *we* may continue the operation *as long as we please,* does not justify the application of the epithet infinite to the operation itself; if anything is infinite, it is the will which continues the operation, which is absurd if said of human wills. Consequently, the attribute of infinity is not predicable either of " diminution without limit," " augmentation without limit," or " endless approximation to a fixed limit "; for these mathematical processes continue only as we continue them, consist of steps successively accomplished, and are limited by the very fact of this serial incompletion.

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* If, then, as Hug maintains, Number is the source of all mathematical science in general, it is self-evident that mathematics deals solely with the finite : " Die einfache und allgemein verständliche Verrichtung des Zählens ist die Quelle, aus der eine ganze, grosse Wissenschaft fliesst, die man Mathematik nennt." (Die Mathematik in systematischer Behandlungsweise, 1861, Vol. I. p. 1.) Pascal exhibits a singular union of penetration and blindness with regard to number · " L'unité jointe à l'infini ne l'augmente de rien, non plus qu'un pied à une mesure infinie. Le fini s'anéantit en presence de l'infini, et devient un pur néant. . . . . . Il est vrai qu'il y a un infini en nombre; mais nous ne savons ce qu'il est. Il est faux qu'il soit pair, il est faux qu'il soit impair; car, en ajoutant l'unité, il ne change point de nature ; cependant c'est un nombre, et tout nombre est pair ou impair : il est vrai que cela s'entend de tous nombres finis." (Pensées, Chap. XI. § 1.) He saw, on the one hand, that every quantity, number included, is susceptible of augmentation, and, on the other, that infinity is incapable of augmentation. In order, therefore, to reconcile the notion of number, which necessarily involves addibility, with that of infinity, he was driven to the absurdity of maintaining that addition does not involve augmentation ! If he had seen that addition *is* augmentation, he would have seen that infinity is as unsusceptible of one as of the other, and consequently cannot be predicated of number. He would also have seen that every number, irrespective of its greatness, must by the addition of unity be changed either from even to odd, or from odd to even ; infinite number would be number still.

We cannot forbear pointing out an important application of these results to the Critical Philosophy. Kant bases each of his famous four antinomies on the demand of pure reason for unconditioned totality in a regressive series of conditions. This, he says, must be realized either in an absolute first of the series, conditioning all the other members, but itself unconditioned, or else in the absolute infinity of the series without any first; but reason is utterly unable, on account of their mutual contradiction, to decide in which of the two alternatives the Unconditioned is found. By the principles we have laid down, however, the problem is solved. The absolute infinity of a series is a contradiction *in adjecto.* As every number, although immeasurably and inconceivably great, is impossible unless *unity* is given as its basis, so every series, being itself a number, is impossible unless a *first term* is given as its commencement. Through a first term alone is the Unconditioned possible ; that is, if it does not exist in a first term, it cannot exist at all ; of the two alternatives, therefore, one altogether disappears, and reason is freed from the dilemma of a compulsory yet impossible decision. Even if it should be allowed that the series has no *first term,* but has originated *ab æterno,* it must always at each instant have a *last term ;* the series *as a whole* cannot be infinite, and hence cannot, as Kant claims it can, realize in its wholeness unconditioned totality. Since countless terms forever remain unreached, the series is forever limited by them. Kant himself admits that it can never be completed, and is only potentially infinite ; * actually, therefore, it is by his own admission finite. But a last term implies a first, as absolutely as one end of a string implies the other ; the only possibility of an Unconditioned lies in Kant's first alternative, and if, as he maintains, Reason must demand it, she cannot hesitate in her decision. That number is a limitation is no new truth, and that every series involves number is self-evident ; and it is surprising that so radical a criticism on Kant's system should never have suggested itself to his opponents. Even the so-called moments of Time cannot be regarded as constituting a real series, for a series cannot be real

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* " Der Regressus in ihr aber [d. h. in der Reihe] ist niemals vollendet, und kann nur *potentialiter* unendlich genannt werden." (Kritik d. r. Vernunft, p. 331.)

except through its divisibility into members; whereas Time is indivisible, and its partition into moments is a conventional fiction. Exterior limitability and interior divisibility result equally from the possibility of discontinuity. Exterior illimitability and interior indivisibility are simply phases of the same attribute of *necessary continuity*, contemplated under different aspects. From these principles flows another, upon which it is impossible to lay too great stress; namely, *illimitability and indivisibility, infinity and unity, reciprocally necessitate each other.* Hence the Quantitative Infinites must be also Units; and the division of Space and Time, implying absolute contradiction, is not even cogitable as an hypothesis. The utility of this principle in the solution of Hamilton's antinomies will be conspicuous, and justify the emphasis we lay upon it.*

By the *a priori* analysis of the conception of quantity, and by the *a posteriori* analysis of quantities and quantuplicities, we have attained the same conclusion, that mathematics has nothing to do with infinity. This conclusion is still further strengthened by considering the mathematical symbol of infinity, and citing the interpretations given to it by mathematicians themselves. The algebraic formula is this: $\frac{a}{0} = \infty$, $0 = \frac{a}{\infty}$, in which the values of 0 and ∞ are correlative, that of 0 determining that of ∞, while a represents any finite quantity. Now the value of 0 is not invariable, but depends on the nature of the process in which it is employed; when it is the result of subtraction, it denotes the absolute absence of all magnitude, but when it is used as a multiplier or a divisor, it signifies the limit of a series of suppositions. For instance, $a - a = 0$, in the former sense; $a \times 0 = 0$, in the sense that

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* In our former article (§§ 4, 7) it is maintained that matter necessarily consists of indivisible atoms or units. But since these are indubitably limited, it may appear that the principle in the text fails to substantiate itself. But it is evidently valid only of *necessary* continuity, and should be so interpreted. Space and ultimate atoms equally possess incomposite unity (indivisibility); the difference is, that the unity of Space is *necessary*, while that of atoms is simply *actual*. The Nature of Things necessitates the indivisibility of Space, but no reason can be found in the Nature of Things why atoms should not be further divisible, although the process must somewhere have found an end. These principles, it will hardly be necessary to state, apply exclusively to *continua*, and not to existences of which continuity is not an attribute.

0 is the limit which we shall approximate by continually conceiving smaller and smaller quantities.* In the formula $\frac{a}{0} = \infty$, the real divisor is not absolute zero, which is merely regarded as the final and unattainable limit of all diminution, but a quantity which is assumed to be infinitesimal, that is, of inconceivable smallness. Consequently the quotient ∞ is not absolute infinity, which is merely regarded as the final and unattainable limit of all augmentation, but a quantity which is assumed to be mathematically infinite, that is of inconceivable greatness.† The word *infinite*, therefore, in mathematical usage, as applied to *process*, and to *quantity*, has a twofold signification. An infinite process is one which we can continue *as long as we please*, but which exists solely in our continuance of it.‡ An infinite quantity is one which exceeds our powers of mensuration or of conception, but which nevertheless has bounds or limits in itself.§ Hence the possibility

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* "If from a we take a, there remains 0, and in this sense only can *nothing* be received as an absolute result of calculation. .... But when we consider multiplication or division by 0, we can only attach to the process a clear idea of what we are doing by considering the limit to which we shall come by continually multiplying and dividing by smaller and smaller quantities. .... The idea of making a difference between the 0 which results from one process and from another may be entirely new to the student; but we must endeavor to make him see that the distinction is as necessary as the introduction of 0 itself. .... It [i.e. the symbol 0] expresses that in some manner or other a perfect absence of all magnitude is either arrived at, or is the limit of a series of suppositions." (Prof. De Morgan, Differential and Integral Calculus, pp. 11–13.)

† "Hence $\frac{a}{x}$, when x diminishes without limit, itself increases without limit, which is the only intelligible view we can attach to the equation $\frac{a}{0} = \infty$. Similarly, when x increases without limit, $\frac{a}{x}$ diminishes without limit, which is the only meaning we can attach to $\frac{a}{\infty} = 0$." (De Morgan, Diff. and Integ. Calc., p. 12.) "The symbols by which we shall represent an infinity and an infinitesimal are ∞ and 0 ; the relation of which is, that if a represent a finite quantity, $\infty = \frac{a}{0}$; and $0 = \frac{a}{\infty}$. .... It will be observed that 0 does not represent absolute zero, and that ∞ does not express absolute infinity." (Price, Infinitesimal Calculus, Vol. I. p. 18.)

‡ "We say that 1, $1 + \frac{1}{2}$, $1 + \frac{1}{2} + \frac{1}{4}$, $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8}$, &c., &c., is a series of quantities which continually approximates to the limit 2. Now the truth is, these several quantities are fixed, and do not approximate to 2. The first is 1, the second $\frac{3}{2}$, and so on; it is *we ourselves* who approximate to 2, by passing from one to another." (De Morgan, Diff. and Integ. Calc., p. 9.)

§ "To use the words *infinitely great* in any sense, and to reject the corresponding

of relations among infinite quantities, and of different orders of infinities. If the words *infinite, infinity, infinitesimal* should be banished from mathematical treatises and replaced by the words *indefinite, indefinity,* and *indefinitesimal,* mathematics would suffer no loss, while, by removing a perpetual source of confusion, metaphysics would get great gain.*
It is the obstinate persistency of imagination in the effort to transform the idea of infinity into a sensuous conception, which has generated the innumerable paralogisms scattered with such profusion through the pages of philosophical works; and imagination is directly encouraged in this hopeless effort by the common notion that infinity and quantity are compatible attributes, and susceptible of a mathematical synthesis. Perhaps

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method of using the words *infinitely small,* is to accustom ourselves to false distinctions. If it be proper, in any manner whatsoever, to say that x is infinitely great, it is equally proper to say that $\frac{1}{x}$ is infinitely small. It is usual to say that, when x is infinite, $\frac{1}{x}$ is nothing; and the meaning is simply this, that there is no limit to the smallness of $\frac{1}{x}$, if there is no limit to the greatness of x, or that by making x sufficiently great, we may make $\frac{1}{x}$ as small as we please." (De Morgan, Diff. and Integ. Calc., p. 25.) "By finite we generally mean that which is within reach, or may be brought within reach, of our senses. . . . . The powers, therefore, of our senses and mind place the limit to the finite; but those magnitudes which severally transcend these limits, by reason of their being too great or too small, we call *infinite* and *infinitesimal* (or infinitely small). . . . . Again, an infinite quantity may be so large as not only to surpass the compass of our senses, but also to surpass quantities which are from their magnitude beyond them; that is, there may be infinite quantities beyond infinite quantities, and others again beyond these: and thus there may be quantities infinitely greater than infinities, and there may be orders of infinities." (Price, Infinites. Calc., Vol. I. pp. 12, 13.) "J'appelle *quantité infiniment petite,* toute quantité qui est considerée comme continuellement decroissante, tellement qu'elle puisse être rendue aussi petite qu'on le veut. . . . .
L'unité divisée par une quantité infiniment petite, est ce qu'on nomme *quantité infinie* ou *infiniment grande.*" (Carnot, Réflexions sur la Métaphysique du Calcul Infinitésimal, 1813, pp. 19, 20.)
    * After quoting a passage from Pascal on the Method of Indivisibles, Carnot says: " Ce passage est remarquable, non seulement en ce qu'il prouve que les géomètres savaient très-bien apprécier le mérite de la méthode des indivisibles, mais encore en ce qu'il prouve que la notion de l'infini mathématique, dans le sens même qu'on lui attribue aujourd'hui, n'était point étrangère à ces géomètres; car il est clair par ce qu'on vient de citer de Pascal, qu'il attachait au mot *indéfini* la même signification que nous attachons au mot *infini,* qu'il appelait simplement *petit* ce que nous appelons infiniment petit, et qu'il négligeait sans scruple ces petites quantités vis-à-vis des quantités finies." He also cites Roberval as using *infinite* and *infinitely small* in the same manner. (Réflexions, etc., pp. 145, 146.)

no more striking illustration of this can be found than in Locke's Essay on the Human Understanding, where it is laid down that " our idea of infinity arises from the contemplation of quantity" (which is true only in the sense that quantity necessarily suggests its own conditions, infinite Space and Time), that " the idea of infinity consists in a supposed endless progression," and that it is number which " furnishes us with the clearest and most distinct idea of infinity we are capable of." * But similar confusion of thought is to be found almost everywhere ; and even Locke scarcely equals the inconclusiveness and speculative aberrations which are evinced in Hamilton's writings on these subjects. The genius and subtilty which have deservedly immortalized the Scotch metaphysician in his psychological researches, seem to have deserted him as he approached the transcendental regions of the Unconditioned.

We are now prepared to examine the list of " Contradictions proving the Psychological Theory of the Conditioned," with which Hamilton † attempts to buttress the law of the conditioned already criticised in the previous pages. We propose to complete our task by briefly criticising these alleged contradictions *seriatim.*

" 1. Finite cannot comprehend, contain the Infinite.—Yet an inch or minute, say, are finites, and are divisible *ad infinitum ;* that is, their terminated division incogitable."

That is, an inch or minute contains either an *infinite number of parts* or an *infinite process of division.* The phrases have just been shown to be contradictions, and consequently either assertion is absurd. Moreover, to say that a *quantity* could *contain* a *process* would be as absurd as to say that a mile could contain a calculation : the things are not of the same kind.

" 2. Infinite cannot be terminated or begun. — Yet eternity *ab ante* ends now ; and eternity *a post* begins now. — So apply to Space."

If a statement contains a contradiction, the best possible refutation is to point it out. Since infinity and unity involve

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each other, as has been shown, the assertions that our *now* breaks the continuity of Time, and our *here* the continuity of Space, are contradictions; and the statement is absurd. Eternity and Space are each indivisibly *one*, neither ending nor beginning.

"3. There cannot be two infinite maxima. — Yet eternity *ab ante* and *a post* are two infinite maxima of time."

Same as No. 2. One contradiction generates countless others. Moreover, two infinite maxima are no more absurd than one infinite maximum; for *maximum* is a relative and quantitative conception, implying other quantities of the same kind; whereas there can be but one infinite of the same kind.

"4. Infinite maximum if cut into two, the halves cannot be each infinite, for nothing can be greater than infinite, and thus they could not be parts; nor finite, for thus two finite halves would make an infinite whole."

An infinite maximum is absurd, and a bisected infinite is absurd.

"5. What contains infinite extensions, protensions, intensions, cannot be passed through, — come to an end. An inch, a minute, a degree, contains these; *ergo*, etc. Take a minute. This contains an infinitude of protended quantities, which must follow one after another; but an infinite series of successive protensions can, *ex termino*, never be ended; *ergo*, etc."

Same as No. 1. From the single contradiction of an *infinite number* the whole cobweb is spun.

"6. An infinite maximum cannot but be all inclusive. Time *ab ante* and *a post* infinite and exclusive of each other; *ergo*."

Same as Nos. 2 and 3.

"7. An infinite number of quantities must make up either an infinite or a finite whole. I. The former. — But an inch, a minute, a degree, contain each an infinite number of quantities; therefore an inch, a minute, a degree, are each infinite wholes, which is absurd. II. The latter. — An infinite number of quantities would thus make up a finite quantity, which is equally absurd."

In other words, an infinite finite is either infinite or finite!

The best answer will be a " Rowland for an Oliver." A quadrangular triangle must have either three angles or four. I. The former. — But then it is not quadrangular. II. The latter. — But then it is not a triangle.

" 8. If we take a finite quantity (as an inch, a minute, a degree), it would appear equally that there are, and that there are not, an equal number of quantities between these and a greatest, and between these and a least."

The conceptions of a greatest quantity and a least quantity are self-contradictions. According to the mathematical definition, quantity is " that which is susceptible of augmentation and diminution." The limitations of real objects are due, not to their nature *as quantities*, but to physical causes; hence in thought every quantity may be increased or decreased *ad libitum*.

" 9. An absolutely quickest motion is that which passes from one point to another in space in a minimum of time. But a quickest motion from one point to another, say a mile distance, and from one to another, say a million million of miles, is thought the same ; which is absurd."

Protension, as well as extension, is a mensurable quantity ; hence a least protension, or quickest motion, taken abstractly, is a contradiction. But we must distinguish between the possibilities of thought and the actualities of real being. Thought may contemplate the quantity of an object by itself, as an abstracted attribute unrelated to physical attributes ; and the nature of pure quantity forbids a greatest and a least. But in real being the attributes of an object are inseparable, and every object is limited on account of some physical reason or relation. Consequently, though there must exist in real being an actual greatest and an actual least, in mere thought a greatest and a least are necessarily impossible, from the very nature of quantity. And since Hamilton's puzzle refers solely to thought, its solution is found in its own contradiction.

" 10. A wheel turned with quickest motion ; if a spoke be prolonged, it will therefore be moved by a motion quicker than the quickest. The same may be shown using the rim and the nave."

Same as No. 9. The very illustration employed shows the

absurdity of calling any *actual* motion the absolutely *quickest* motion, that is, the quickest motion possible in the nature of things.

"11.   Contradictory are Boscovich Points, which occupy space, and are inextended.   Dynamism, therefore, inconceivable.   *E contra,*

"12.   Atomism also inconceivable ; for this supposes atoms, — minima extended but indivisible."

The same distinction as above must be again observed between being and thought, on pain of contradiction.   Atoms *actually indivisible by existent physical forces* are one thing ; atoms *necessarily indivisible in the nature of things* are a very different thing.   If atoms were simply abstract mathematical quantities, they might be divided indefinitely ; although even then their existence as extended quantities could never be destroyed by the process of division ; neither could the process of division be infinite, since every process is limited to the steps already reached.   But that atoms, as real components of a real mass, are not divided beyond a certain practical limit, wherever that may be, is demonstrated by the very existence of matter as an aggregation of parts.   Nothing is more ridiculous than to suppose a process of division perpetually going on in matter, as an actual fact ; yet the only alternative is to suppose that the parts of matter possess already a degree of minuteness practically ultimate.*   Dynamism, therefore, is

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* Descartes and Newton furnish most cogent illustrations of the necessity of these conclusions.   Descartes started with the theory that extension alone constitutes the essence of matter ; he therefore could regard matter solely under its mathematical relations, and had to maintain its endless divisibility : "Nam planè profiteor, me nullam aliam rerum corporearum materiam agnoscere, quàm illam omnimode divisibilem, figurabilem et mobilem, quam Geometræ quantitatem vocant, et pro objecto suarum demonstrationum assumunt ; ac nihil planè in ipsa considerare, præter istas divisiones, figuras et motus ; nihilque de ipsis ut verum admittere, quod non ex communibus illis notionibus, de quarum veritate non possumus dubitare, tam evidenter deducatur, ut pro mathematica demonstratione sit habendum.   Et quia sic omnia Naturæ phænomena possunt explicari, ut in sequentibus apparebit, nulla alia Physicæ principia puto esse admittenda, nec alia etiam optanda."   (Princip. Philos., Pars Secunda, § LXIV., ed. 1685.)   He distinctly identifies substance with quantity : "Quippe quantitas a substantia extensa in re non differt, sed tantum ex parte nostri conceptus, ut et numerus a re numerata."   (Ibid., § VIII.)   Newton, on the other hand, who studied Nature not merely as a mathematician, but also as a physicist, was compelled to accept the theory of atomism : see Optice, Lib. III. Quæst. 31, and Principia,

both inconceivable and impossible, and cannot be rendered tenable even by the genius of a Leibnitz ; atomism, if sensuously unimaginable or inconceivable, still violates no law of thought, and is a necessary deduction from empirical observation.

"13. A quantity, say a foot, has an infinity of parts. Any part of this quantity, say an inch, has also an infinity. But one infinity is not larger than another. Therefore an inch is equal to a foot."

Compare Nos. 5 and 7 ; the same absurdity of an infinite number reappears. But if Hamilton undertakes to deal with the mathematical " infinite," he should observe that mathematics admits among its infinites relations of unequal magnitude.

" 14. If two divaricating lines are produced *ad infinitum* from a point where they form an acute angle, like a pyramid, the base will be infinite and, at the same time, not infinite : 1°, because terminated by two points ; and, 2°, because shorter than the sides ; 3°, Base could not be drawn, because sides infinitely long."

The impossibility of an infinite line has been shown above ; and the hypothesis is therefore contradictory.

" 15. An atom, as existent, must be able to be turned round. But if turned round, it must have a right and left hand, &c., and these its signs must change their place ; therefore, be extended."

See Nos. 11 and 12. The only absurdity consists in maintaining that atoms are *not* extended.

We have now concluded our tedious examination of Hamilton's alleged contradictions. In every case, the contradiction has been shown to lie solely in Hamilton's own hypothesis ; and it may give us increased confidence in the principles set forth in the foregoing pages, to see that they enable us so easily to untie this formidable knot of antinomies. It only

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Lib. III. Pr. 6, Cor. 3.   Saisset, in his Essai de Philosophie Religieuse, p. 142, attributes to Newton a more precise enunciation of the distinction in the text than seems to be warranted by the passages referred to : " Pour lui, si tout corps est idéalement divisible à l'infini, en tant qu'étendu, il n'en résulte pas le moins du monde qu'elle soit effectivement divisé." To distinguish between body as ideally divisible and as practically indivisible, is a very accurate statement of the truth.

remains, in order to accomplish our task, to discover the source of Hamilton's Law of the Conditioned, and form an estimate of his originality.

The Law of the Conditioned is an attempt to determine *a priori* the precise limits of human thought. The principle upon which it rests is the principle of mental impotence ; its method is the development of a necessary contradiction maintained to exist between the decisions of Reason, when she exercises herself in speculations upon the Infinite and the Absolute. Now Hamilton repudiates the Kantian system in the very article in which he first propounded his own, as "leading to absolute scepticism" ; * and his strictures are in the main just, for such is the tendency of every philosophy which culminates in antinomy. Yet Kant employs the same principle and the same method by which Hamilton builds up his Philosophy of the Conditioned ; with this difference, that the power and logical acumen which he exhibits are absent in a marked degree from these speculations of the Scotch metaphysician. The relation between the Critical Philosophy and the Philosophy of the Conditioned is genetic ; in fact, so far as this system is concerned, Hamilton is only a clumsy imitator of Kant, and betrays his unskilfulness by alterations for the worse. While Kant sagaciously idealizes Time and Space, and finds his antinomies in the problems of the infinity of matter, the atomic simplicity of matter, the existence of freedom, and the existence of a necessary Being, Hamilton incalculably weakens his argument by transferring the antinomies to Space and Time, in which Kant was analyst enough to see there could be none, inasmuch as infinity is a constituent element in the idea of each.† A simple comparison will reveal the close affinity between the Kantian and the Hamiltonian doctrines, and substantiate our allegation that the latter is simply a deterioration of the former. It is the doctrine of each system, that, in seeking to attain transcendental knowledge of the Infinite and Absolute, reason falls into an inevitable and hopeless antinomy. Now that the nature of this antinomy, its supposed effect upon

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* Discussions, p. 25.

† "Der Raum wird als eine unendliche gegebene Grösse vorgestellt." (Kritik d. r. Vernunft, p. 712.)

the validity of human knowledge, and supposed tendency to promote our highest practical interests, are substantially identical in both systems, will be abundantly shown by the following passages. Treating of the search for the Unconditioned in a regressive series of conditions, Kant says : —

" This Unconditioned can be thought, either as consisting simply in the entire series, all of whose terms without exception would then be conditioned, and their entirety alone unconditioned (in which case the regress is called Infinite) ; or else as consisting simply in one term of the series (the Absolute), to which the remaining terms are subordinated, while this is conditioned by no other." *

And again : —

" With all possible perceptions, you remain forever hemmed in by *conditions*, whether in Space or Time, and never attain to aught Unconditioned, so as to decide whether it is to be placed in an absolute commencement of the series, or in an absolute totality of the series without any commencement." †

If these and similar passages are compared with the one already cited from Hamilton, in which he states his Law, it will be seen that both philosophers place the Infinite in an unconditioned *totality* of a series, the Absolute in an unconditioned *first* of a series ; with this difference, that, while the series of Kant is cognized by the understanding, urged on by the reason to search for an *unattainable* Unconditioned, the series of Hamilton is cognized by the sensuous imagination, urged on by reason to search for an *inconceivable* Unconditioned. Kant's antinomy lies confessedly between the reason and the understanding, inasmuch as the former demands what

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* " Dieses Unbedingte kann man sich nun gedenken, entweder als blos in der ganzen Reihe bestehend, in der also alle Glieder ohne Ausnahme bedingt und nur das Ganze derselben schlechthin unbedingt ware, und dann heisst der Regressus unendlich; oder das absolut Unbedingte ist nur ein Theil der Reihe, dem die übrigen Glieder derselben untergeordnet sind, er selbst aber unter keiner anderen Bedingung steht." (Kritik d. r. Vernunft, p. 331.)

† " Ihr bleibt mit allen möglichen Wahrnehmungen immer unter *Bedingungen*, es sei im Raume, oder in der Zeit, befangen und kommt an nichts Unbedingtes, um auszumachen, ob dieses Unbedingte in einem absoluten Anfange der Synthesis, oder einer absoluten Totalität der Reihe, ohne allen Anfang, zu setzen sei." (Ibid., p. 382.)

the latter cannot attain, that is, the Unconditioned; Hamilton's antinomy lies between the reason and the imagination, but he perceives no distinction, and confounds the two faculties under the general term *think* or *conceive.* The agreement is fundamental and important; the difference is of importance only as indicating the greater profundity and subtlety of the philosopher of Königsberg.

With reference to the tendency of their doctrines towards scepticism, an accusation which both philosophers seek by anticipation to repel, their language is as follows : —

" By the doctrine, on the contrary, which I propose, these contradictory phenomena are carried up into the common principle of a limitation of our faculties. Intelligence is shown to be feeble, but not false; our nature is, thus, not a lie, nor the Author of our nature a deceiver." *

" The ideas of pure reason can never be in their own nature self-conflicting ; but their misemployment only can cause fallacies and illusions to arise from them." †

And again : —

" There is, therefore, no natural contradiction in the domain of pure reason." ‡

Both philosophers subvert the credibility of intelligence; but Hamilton, recognizing the dangerous character of the Kantian doctrine, gravely recommends his own as " subverting scepticism." After what has preceded, no comment on this pretension is needed. It is enough to point out that they equally failed to perceive the real drift of their own philosophies.

Lastly, with reference to the supposed influence of their doctrines on morality and religion, there is again a marked parallelism of opinion between the two thinkers. For example : —

" I shall only add, in conclusion, that, as this is the one true, it is the

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* Metaphysics, p. 556.

† " Die Ideen der reinen Vernunft können nimmermehr an sich selbst dialektisch sein, sondern ihr blosser Missbrauch muss es allein machen, dass uns von ihnen ein trüglicher Schein entspringt." (Krit. d. r. Vern., p. 519.)

‡ " So giebt es demnach keine eigentliche Polemik im Felde der reinen Vernunft." (Ibid., p. 584.) Yet Hamilton says, Discussions, p. 25, " Speculative reason, on Kant's own admission, is an organ of mere illusion." This may be the result of his system, but Kant certainly does not admit it ; neither does Hamilton himself.

only orthodox, inference. . . . . Faith, — Belief, — is the organ by which we apprehend what is beyond our knowledge." *

Again : —

" Above all, I am confirmed in my belief, by the harmony between the doctrines of this philosophy and those of revealed truth. . . . . Humility thus becomes the cardinal virtue, not only of revelation, but of reason." †

" I cannot even assume, in behalf of practical reason, the existence of God, Freedom, and Immortality, unless at the same time I deprive speculative reason of its claim to transcendental vision. . . . . I was compelled, therefore, to uproot Knowledge in order to make room for Faith. . . . . Above all [the value of the Critical Philosophy will be apparent], if we consider the inestimable advantage of silencing forever all objections against morality and religion after the Socratic fashion, namely, by demonstrating the ignorance of the objector." ‡

It would be doing injustice to the memory of great and good men to withhold our tribute of honor from the spirit which prompted such words as these. They set themselves manfully to combat the errors of their times, and stood forth as the champions of those high interests which give to human life all its dignity and significance. But while the general conclusion, the grand result which they aimed to establish, is friendly in the highest degree to a wise philosophy and a true religion, the means adopted to reach it are fraught with terrible danger to both. The " Faith" which cannot stand unless buttressed by contradictions, is built upon the sand. The profoundest possible faith is faith in the integrity of human nature and in the unity of truth. If there is found to be any want of concord in the normal interaction of human faculties, any conflict in the results of a right reason, any inevitable treachery to truth on

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* Lectures on Metaphysics, p. 531.

† Discussions, p. 588.

‡ " Ich kann also *Gott, Freiheit* und *Unsterblichkeit* zum Behuf des nothwendigen praktischen Gebrauchs meiner Vernunft nicht einmal *annehmen*, wenn ich, nicht der spekulativen Vernunft zugleich ihre Anmassung überschwänglicher Einsichten *benehme*. . . . . Ich musste also *Wissen* aufheben, um zum *Glauben* Platz zu bekommen, ... — am meisten aber, wenn man den unschätzbaren Vortheil in Anschlag bringt, allen Einwürfen wider Sittlichkeit und Religion, auf *sokratische* Art, nämlich durch den klarsten Beweis der Unwissenheit der Gegner, auf alle künftige Zeit ein Ende zu machen." (Kritik d. r. Vern., p. 679.)

the part of her sole interpreter, no appeal to practical interests, or traditionary authority, or intuitional or theological faith, can stay the flood of scepticism. It has been well said by a critic of Hamilton in the Prospective Review, that " a philosophy which creates antinomies may have the highest merit but one ; the highest of all is reserved for a philosophy that resolves them." No theory of knowledge can be a true one which fails to place in the clearest light the admirable concord of the universe, and dissipate the clouds of seeming contradiction. Faith sets herself to an ignoble task when she would force human reason to commit suicide ; and it is well for faith herself that the task is as hopeless as it is ignoble.

We shall conclude by exhibiting the theological corollaries which flow from the doctrine of the preceding pages, and the relation which we conceive to exist between the infinity of God and his other attributes. The doctrine of a purely negative cognition of the Infinite, which has caused religion to fear and scepticism to exult on equally fallacious grounds, is rendered not only innocuous, but salutary, by distinctly bearing in mind what is meant by " the Infinite." " If the Infinite is utterly incomprehensible in any positive sense," exclaim doctors of divinity in alarm, " what foundation is left for Christianity ? What becomes of its sweet supports and consolations, if God is absolutely beyond our positive knowledge ? But we are conscious that we *do* know God — partially, it is true, yet really — in our own experience ; therefore the Infinite can be, at least to a certain extent, positively known." It is amazing how almost universally such shallow sophisms pass current among men ; they meet us on every hand. This common argument illustrates the danger of not observing the distinction between the attributive and the metonymical use of the term Infinite. The Infinite is not God. It is not even an immediate attribute of God, but denotes merely the illimitation of his attributes ; and this illimitation is negatively cognized. The distinction of Coleridge, that we may *apprehend*, but not *comprehend*, the Infinite, is superficial ; we comprehend nothing more completely than the Infinite. For the idea of illimitability is as clear, precise, and intelligible as the idea of limita-

bility which is its basis. The propositions " A is X," " A is not-X," are equally comprehensible; the conceptions A and X are in both cases positive data of experience, while the affirmation and negation consist solely in the copulative or disjunctive nature of the predication. Consequently, if X is comprehensible, so is not-X; if the finite is comprehensible, so also is the Infinite. Since no sane man claims to comprehend either Space, Time, or God, the distinction of Coleridge is either a mere truism or a fallacy.

The idea of God originates, not in the suggestions of outward nature, but in the depths of humanity itself. The soul cannot infer God from nature, except in virtue of what it first projects into nature. Hence the radical defect in the argument from design ; for the affirmation of an intelligent World-cause is the objective transference of a subjective consciousness. Although it may be mutilated and perhaps annihilated by the pitiless manipulations of a sceptical and aberrant logic, the idea of an All-pervading Personality is the formative nucleus of the idea of God ; and this idea of personality, which finds no analogue in the world of matter, can only be generated through the soul's consciousness of selfhood. Not until this is objectified and matured into the idea of an omnipresent Self, can the argument from design become pertinent or forceful. But once posit this unconditioned existence, and nature, becoming its manifestation or visible word, pours a flood of light upon its attributes. Selfhood, therefore, or personality, is the primordial germ of the idea of God ; and in the development of this idea from void personality into determinate character, the soul must still repeat its former procedure and reiterate human analogies. Human nature, therefore, is the point of departure in the search for God. The four grand elements of personality or conscious being — intelligence, will, affection, and conscience — are elevated to absolute perfection, and become the august attributes of omniscience, omnipotence, all-lovingness, and all-holiness. But conjoined with these four elements, positive in their nature though negative in their infinity, must co-exist attributes purely negative, disallowing the four grand limitations of human existence, — cause, dependence, space, and time, — and thus constituting the awful mysteries of self-exist-

ence, absoluteness, omnipresence, and eternity.   It is thus
evident that, while the idea of God contains positive elements,
it is more largely constituted by elements purely negative ; and
even these positive elements are associated with the negative
idea of infinity, which, without destroying their essential na-
ture, carries them immeasurably beyond the vastest reach of
thought.   To accuse such an idea, so overwhelming in its
sublimity, of a degrading anthropopathism, is simply to misap-
prehend the meaning of degradation.   A community of nature
between God and man is the absolute condition of religion ;
and, though matched with the stellar hosts which fill with
resplendent beauty the bosom of infinite Time and Space, a
moral nature, finite though it be, is the very culmination of the
sublime.   In vain would Philosophy divest her idea of God of
all human attributes.   Every such attempt degrades the Being
she would exalt ; and she must at last confess that a certain
reverent outshadowing of the human upon the background of
infinity yields equally the most majestic and the least inade-
quate idea of the Divine.   When, however, it is said that
human nature, in its positive aspect and freed from its restric-
tions, is an epitome, a copy in miniature, of the Divine, this is
true only of ideal humanity, not of humanity as it exists in the
distorted images we see around us.   We predicate of God no
positive attribute which is not essential to a perfect humanity,
and no attribute which is essential to a perfect humanity can
we omit in our idea of God.   If, therefore, the ideal human
has ever become historically real, that realization is the pro-
foundest utterance of God ; and it is the conscious or uncon-
scious longing for such a realization which has riveted the eyes
of all the ages upon the Man of Palestine.   The positive attri-
butes of God are shared by him in a measure with all his
children ; his negative attributes, and whatever other perfections
are veiled in the blinding lustre of his incommunicable essence,
are his own alone.   And while these inscrutable mysteries
shroud the Divine radiance from human eyes, no earnest thinker
need fear that the Deity vanishes in a " God understood."

But, in thus assuming a community of nature between God
and man, we are at once confronted with the assertion that
personality is by necessity a limitation or restriction, and that

an infinite or absolute Personality is a contradiction in terms. This objection admits of a duality of form, according as the limitation is maintained to be intrinsic or extrinsic; and we cite two representative arguments, taken respectively from Fichte and from Strauss.

" This Being must be differentiated from you and the universe, and must act in the latter according to conceptions; it must therefore form conceptions, and possess personality and consciousness. But what do you mean by personality and consciousness? do you mean that which you have found in yourself, learned to know in yourself, and have designated by this name? But that you neither do nor can think this except as limited and finite, the most cursory attention to your own formation of this conception will prove to you. You therefore create this Being by the attribution of personality to a being limited, and like yourself; and you have not, as you wished to do, thought God, but only reduplicated in thought your finite self." *

This argument is condensed into four words by Spinoza, — " *Omnis determinatio est negatio.*" But all real being must be determined; only pure Nothing can be undetermined. Even Space and Time, though cognized solely by negative characteristics, are determined in so far as differentiated from the existences they contain; but this differentiation involves no limitation of their infinity. All differentiation or distinction is determination; and, if all determination is negation, that is (as here used), limitation, then the Infinite, being determinately distinguished from the finite, loses its own infinity, and is either absorbed in the finite or else vanishes into pure Nothing or Non-Being. Spinoza, therefore, by the principle that all determination is limitation, reduces his own philosophy to a

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* " Dieses Wesen soll von euch und der Welt unterschieden seyn, es soll in der letzeren nach Begriffen wirken, es soll sonach der Begriffe fähig seyn, Persönlichkeit haben und Bewusstseyn. Was nennt ihr denn nun Persönlichkeit und Bewusstseyn? doch wohl dasjenige, was ihr in euch selbst gefunden, an euch selbst kennen gelernt, und mit diesem Namen bezeichnet habt? Dass ihr aber dieses ohne Beschränkung und Endlichkeit schlechterdings nicht denkt, noch denken könnt, kann euch die geringste Aufmerksamkeit auf eure Construction dieses Begriffs lehren. Ihr macht sonach dieses Wesen durch die Beilegung jenes Prädicats zu einem endlichen, zu einem Wesen eures Gleichen, und ihr habt nicht, wie ihr wolltet, Gott gedacht, sondern nur euch selbst im Denken vervielfältigt." (Fichte, Ueber den Grund unseres Glaubens an eine göttliche Weltregierung. Werke, Vol. V. p. 187.)

system of Absolute Nihilism, which is by no means his purpose. A pure Ego, therefore, by determination to thought, volition, affection, is not limited ; its limitation or illimitation depends simply upon the *character* of this thought, volition, or affection, as perfect or imperfect.   As the attribute of continuity has been shown to exist equally in infinite Space and in finite Extension, without involving *per se* quantitative finitude or infinitude, so pure personality is absolutely neutral with respect to qualitative finitude or infinitude, that is, imperfection or perfection.   Imperfection admits of different degrees; absolute perfection (which is synonymous with qualitative infinity) is above the category of degree.   Until, therefore, the simple and unanalyzable idea of selfhood or personality can be demonstrated to necessitate a certain *degree* in its determinations of intelligence, will, affection, and conscience, the assertion that personality *per se* involves intrinsic limitation remains an utterly unsubstantiated assumption.   The further paralogism, that personality, implying unity, thereby implies intrinsic limitation, is completely exposed by a simple reference to the distinction previously established between composite and incomposite unity.   It is manifestly impossible to form a positive, imaginative conception of pure spirit, except under modifications of form and color, as Mr. Sears, in his " Athanasia," admits ; but nothing is more evident than the materialistic nature of such conceptions.   To conceive the Absolute Spirit, especially, with attributes of form or color, is to be guilty of the very grossest anthropomorphism.   The unity of personality is purely incomposite, being equivalent to indivisibility or simplicity ; nothing is implied by it concerning limitation.   If we repress over-curious imagination, and are content with the sublime deliverance of reason, that God is one God, without partition of essence, the unity of personality is no more a limitation to him, than the unity of continuity is a limitation to infinite Space and Time.

The argument of Strauss varies from the foregoing argument of Fichte.

" We know and feel ourselves to be persons only in contradistinction from other persons, like ourselves and external to us ; we distinguish ourselves from them, and are thus conscious of our own finitude.   Con-

sequently the conception of personality, formed in and for the province of the finite, appears to lose all meaning when extended beyond it, and a being which finds no external analogue of itself appears also not to be a person. To speak of a personal God, or Divine personality, is seen, from this stand-point, to be a synthesis of conceptions, one of which absolutely excludes and abolishes the other. Personality is Selfhood limiting itself to a definite compass in antithesis to another, which it thereby separates from itself; Absoluteness, on the contrary, is the Encompassing, the Unlimited, which excludes nothing from itself so much as the exclusiveness latent in the conception of personality ; absolute personality, consequently, is a nonentity about which nothing can be thought." *

This argument strikingly illustrates the danger and the in-consequence of arguing from quantitative to qualitative in-finity. On examining it, the prominence of spatial conceptions is very marked. The mutual exclusion which results from the plurality of objects and the impossibility of their occupying the same space, is the covert drift of the argument. Coexistence of objects in space undoubtedly implies the finitude of the co-existents, but coexistence of personalities implies nothing as to their finitude. There is no analogy, except in a loose metaphorical sense, between things material and things spirit-ual. Even admitting the validity of the analogy, Strauss ille-gitimately uses his data, which can be so employed as to con-struct a plausible argument *a priori* for the existence of a personal God. The existence of material objects being given as an immediately cognized fact, the existence of Space, its *conditio sine qua non*, is absolutely necessitated. But since

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* " Als Personen fühlen und wissen wir uns nur im Unterschiede von andern gleichartigen Personen ausser uns, von denen wir uns unterscheiden, mithin als endliche; in diesem Gebiete der Endlichkeit und für dasselbe gebildet, scheint folglich der Begriff der Persönlichkeit ausserhalb desselben jeden Sinn zu verlieren, und ein Wesen, welches kein anderes seinesgleichen ausser sich hat, auch keine Person sein zu können. Von einem persönlichen Gott, oder göttlicher Persön-lichkeit zu sprechen, erscheint auf diesem Standpunkt als eine Verbindung von Begriffen, deren einer den andern schlechthin ausschliesst und aufhebt. Persön-lichkeit ist sich zusammenfassende Selbstheit gegen Anderes, welches sie damit von sich abtrennt; Absolutheit dagegen ist das Umfassende, Unbeschränkte, das nichts als eben nur jene im Begriff der Persönlichkeit liegende Ausschliesslichkeit von sich ausschliesst : absolute Persönlichkeit mithin ein *non ens,* bei welchem sich nichts denken lässt." (Glaubenslehre, Vol. I. pp. 504, 505.)

material objects are finite, and Space is infinite, the existence
of the finite is demonstrative of the existence of the infinite.
Now infinite Space includes finite objects, without being either
limited by them or merging them in itself.   Consequently, if
the analogy holds good, the existence of finite personalities
necessitates, as their *conditio sine qua non*, or ground of real-
ity, .the existence of an infinite Personality, which includes
them and renders them possible, without either being limited
by them or merging them in itself.   But because we disallow
the legitimacy of arguing from quantitative to qualitative in-
finity, we reject this plausible and seductive proof.   The rela-
tion of inclusion, which is intelligible as existent between Mat-
ter and Space, is altogether meaningless when predicated of
personalities ; it is a mystical conception, which finds expression
in the often-misinterpreted words of Paul, — " in him we live
and move and have our being," — but which philosophy can
recognize solely as a figure of speech.   Persons may be distinct
without mutual limitation.   The only attribute which can
create mutual limitation between two persons, is that of power
or will ; but while finite powers may limit each other, the
statement that a limited power can limit an illimitable power
is absurd on the very face of it.   Hence the alleged limitation
implied in the coexistence of persons is purely fictitious.

But the root of the sophism lies deeper than this.   The idea
of personality, according to Strauss, is a relative one, and con-
sciousness implies a relation between at least two persons.
Now it is indisputable that the Ego comes to consciousness
only as opposed to a Non-Ego ; but it is equally indisputable
that this Non-Ego cannot be a person.   We come into im-
mediate contact with nothing but matter, which is the sole
object of the senses, and through which alone other human
personalities can act upon us ; and matter, therefore, is the
real Non-Ego which conditions consciousness.   But while *con-
sciousness* is conditioned on a Non-Ego, it is untrue to say that
personality is conditioned on a Non-Ego ; for consciousness is
the reflex activity of the personality, not the personality itself.
The personality remains indestructible, although consciousness
may lapse into utter unconsciousness, as in a swoon.   More-
over, because a consciousness which comes into existence in

Time is conditioned on a Non-Ego, it is unwarrantable to say that a Consciousness which never came into existence at all, but has existed *ab æterno*, is likewise so conditioned.   All that we know is, that personality is a simple, ultimate, absolute idea, not analyzable into constituent elements, nor implying *per se* any relation whatever to any other existence.   Consequently, to attribute personality to God, is to predicate nothing which limits in any way his absolute perfection or infinity, strictly and rationally construed.

Such are the true consequences of the doctrine that we cannot positively know infinity ; — consequences which few would controvert, and which are wholly at variance with the Philosophy of the Conditioned.   If Hamilton had been content to teach such a doctrine as this, by wise and self-consistent methods, thoughtful minds would have been spared the disappointment which is the sole fruit of his constructive labors.   Alas for the love of paradox !   Harmony is the grand secret of universal Being ; there are no jarring chords in the music of the spheres.   The laws of Truth are severely simple, and refuse to assume the theatrical attitudes by which men would enhance their naked sublimity.   The needle of human reason trembles violently on its centre at the deflections of error, prejudice, and passion ; but its vibrations move through ever-lessening arcs, and perpetually approximate to a final equilibrium.   Philosophy has not yet achieved a fixed point of departure, and a faultless method of advance ; but when these shall have been attained, she will vindicate her own transcendent nobility, and assume her rightful rank as the Science of Sciences.